

some component of physical risk and potential injury with a need for access to care.

Having connectivity to telemedicine and health information exchange (HIE) in these areas will have a strong affect on quality of care for Michigan tourists. The state's first-rate recreational facilities will be enhanced by broadband capabilities, allowing for real-time access to state-of-the-art health care facilities in the area, and consultations with world-class specialists from across the state.

*Objective(s):*

Level the types and quality of care between urban and rural areas of the state

Increased patient safety

Utilize the new infrastructure in the treatment of residents and tourists in local settings while leveraging resources throughout the state and nation

Promote the availability of these services in the region to promote quality of life and economic development issues

*Action(s):*

Make patient information (labs, x-rays, etc.) available to local health professionals, at the point of care

Improve the availability to consult with distant specialty providers in targeted specialties

*Measurable Outcome(s):*

Improve overall health care outcome

Monitor the increase in network membership and utilization

Monitor the adoption of HIE

## **II. Improve Disaster Preparedness**

The Michigan FCC Pilot Program Collaborative will ultimately connect all the parties necessary to support critical state services. With this baseline connectivity to our core health care infrastructure, this project will enhance the effectiveness of the existing network between the Health Alert Network (HAN), MCIR and the Michigan Disease Surveillance System (MDSS), enhancing the public health infrastructure in Michigan, and its ability to work closely with the United States Coast Guard, Immigration, Customs, the US Border Patrol and the US Department of Homeland Security in a time of emergency. This connectivity will allow for information to flow more quickly and for patients to receive a more accurate diagnosis. Thus allowing for accurate threat assessments and the ability to determine and communicate border breaches, which include bio-terrorism, pandemic influenza and an avian influenza outbreak.

### **Goal #11 - Improve disaster preparedness and response**

#### *Objective(s):*

Utilize new infrastructure to increase chronic and infectious disease treatment and reporting, disaster response, and emergency planning

#### *Action(s):*

Increase chronic disease treatment done through telehealth/telemedicine applications

Reduce morbidity rates for chronic disease by utilizing telehealth/telemedicine applications

Submitting chronic and infectious diseases reports over the new network will increase timely detection of outbreaks

Improve communication and information available for rapid disaster response and more efficient and effective emergency planning

#### *Measurable Outcome(s):*

A reduction in Michigan's chronic disease rate

Faster response to public health emergencies and disease outbreaks

Improved coordination for emergency and disaster planning and response

### **III. Improve Business Processes and Economy**

Michigan has been undergoing a historic restructuring of its economy, particularly in its automotive manufacturing sector. These manufacturers are becoming increasingly disadvantaged in the global marketplace and this has resulted in resource constraints (human and financial) and restrictions in both the private and public sectors, including health care. These restrictions or reductions have been juxtaposed by continuing or increased demand for services and increased costs. Rapidly growing health care costs are well documented for both the public and private sectors in Michigan. Government, employers and employees have all been affected.

This issue was first addressed at Governor Jennifer M. Granholm's 2003 Summit on "Manufacturing Matters in Michigan," when a consensus was reached on the urgent need to develop practical steps at the state and federal level to address employer-sponsored health benefits for employees and retirees.

Based on the feedback from the Manufacturing Matters Summit, Governor Jennifer M. Granholm created the Governor's Council of Economic Advisors. The Council released a report in December 2005 titled "Recommendations to Reduce the Economic Burden of Providing Employer-Sponsored Health care Benefits." This report addresses some of the drivers and trends for both the public, as well as private sectors, and called for health care information technology infrastructure reforms. The report found that:

- Total government outlays from all sources (including federal) spent on direct health care purchases in Michigan in 2004 exceeded \$10 billion, accounting for more than 25 percent of the state's total budget and more than one third of its General Fund
- The Big Three Automakers spent \$10 billion in employee/retiree health care in 2004, half of which was spent in Michigan
- The combined health care expenditures by the Big Three and the State of Michigan in 2004 exceeded \$15 billion, accounting for 24 to 26 percent of Michigan's total expense for health care goods and services

Health care related changes and disruptions reverberate throughout Michigan's economy because, in addition to the sizeable impact of health care related costs to the overall economy, health care is Michigan's largest employer, providing more than 726,000 jobs, \$30 billion in wages and salaries, and \$8 billion in taxes. There are 140 hospitals in Michigan, 58 of which are located in rural areas (North Carolina Rural Health Research and Policy Analysis Center, 2006). Of these 58 rural hospitals, 34 have been CMS designated as Critical Access Hospitals (a CAH has 25 acute beds or less). Additionally, there are 156 Rural Health Clinics in

Michigan and 26 Federally Qualified Health Centers providing services at 139 sites in the state (Kaiser, 2004).

### ***Goal #12 - Improve access to health care education and distance learning***

Getting the latest educational information to rural health care professionals is extremely difficult. Generally, these professionals travel long distances across the state to attend training and conferences, taking them away from their patients. Using distance learning technology, such as web-based training, streaming media, and other real-time applications will increase the number of professionals who are able to stay up-to-date on ever changing research. The same technology can be used to keep patients with special medical education needs up-to-date.

Broadband access would also benefit health care professionals with additional access to online medical research databases, such as, MedLine, leading to faster and more accurate diagnosis. Medical research, especially drug interaction information, changes on a daily bases, providing health care professionals reliable and fast internet connections will enable them to provide better care.

In addition, the Michigan program will address deficiencies in patient health care literacy. According to Marie Skelton, USA TODAY, "Miscommunications between patients and health care providers are increasing the chances that people who need medical care will be hurt or killed in the process, according to a report from a health care accreditation group.

'The implications around all of this are huge if the patient doesn't understand what they have and what they're taking and why. You might be putting the patient in harm's way, and they could be killed,' says Dennis O'Leary, president of the commission."

#### ***Objective(s):***

Use the network to facilitate distance education of health care information to professionals and patients

Increase the number of professionals who are able to stay up-to-date on ever changing research

Improve access to educational media for patient literacy

#### ***Action(s):***

Enable health care facilities to expand educational programs, with the use of internet applications, such as: web-based educational video programming, interactive video for remote participation in classes and discussions,

newsgroups for collaborative discussions and class announcements, using new and existing infrastructure

Provide educational media to improve patient literacy

*Measurable Outcome(s):*

A stronger health care workforce through the increased access to continuing education resources and training opportunities that save both money and time for participants

Monitor the use of the training media to determine the acceptance and ease of use

Improved patient health care literacy through increased access to health care information

**Goal #13 - Reduce the burden of rising health care costs**

There is significant savings to the health care system by the use of telemedicine for patients living in rural areas receiving appropriate care in their communities.

Avoiding moving the patient along the care continuum into more expensive care settings driving cost up simply because of the where the care is being delivered. In addition to the health care savings, there is a general economic savings to patients and their employers in reduced time away from work as a result of less travel time required for medical related services. The American Telemedicine Association's 2006 Annual Meeting in San Diego, CA delivered results of studies covering many aspects of remote health care delivery. Highlighted are outcomes of recent research showing how telemedicine has improved care, reduced cost and provided new ways for patients to access health care. All of the areas covered have application in Michigan. The areas covered the research in the following areas:

- A new study conducted in cooperation with the U.S. Centers for Medicare and Medicaid Services (CMS) found significant savings in health care costs through the use of telemedicine for congestive heart failure (CHF) patients. The study, conducted by the State University of New York, Stony Brook, found that patients using telemedicine to manage their CHF experienced a reduction in overall health care costs of 41%, physician office visits by 43%, emergency room visits by 33%, and hospitalizations by 29%. Reduced physician office visits alone offered a savings of more than \$115 million annually. Aging individuals with chronic conditions account for a disproportionate percentage of health care costs in the United States. The Centers for Medicare and Medicaid Services (CMS) reports that a condition such as congestive heart failure (CHF) can cost more than \$28 billion annually, including \$270 million for physician visits.

- New research out of Fletcher Allen Health Care in Vermont finds that telemental health is superior to face-to-face consultations in certain cases. Treatment for cases of paranoia or schizoid states, extreme shyness, comorbid nonpsychiatric illness, terminal illness, and some phobias were found to be more effective using a "distance" approach with remote videoconferencing. Additionally, the videoconferencing allowed nurse facilitators, family members, or social workers to be present and improved scheduling coordination with different parties. The use of videoconferencing allows providers to tilt or zoom in to observe specific body parts (eyes, mouth, hands, face) or to watch family's or others' responses to consultants questions or remarks without disturbing the patient and/or other parties.
- A newly released report out of Sacramento, California has found that using videophones to connect health providers to families with diabetic children can reduce costs to health care providers while maintaining the quality of care. It was also found that such use can significantly reduce the number of school hours missed by the patient. The study, conducted by Sutter Medical Center in Sacramento, CA, showed how videophone technology helped health care providers communicate with and manage children using insulin pumps spread over 17 California counties. The study's results showed that use of the videophone improved patient compliance and increased cost savings without compromising patient satisfaction and quality of care. The biggest impact was on valuable provider time, where patients missed substantially fewer videophone exams than in-person exams.
- A significant reduction was achieved in patients re-hospitalized with a heart failure diagnosis through the introduction of remote monitoring into an existing heart failure program according to a new study. The research was conducted by the University of Pittsburgh Medical Center and South Hills Health System Home Health in Pittsburgh, Pennsylvania. Re-hospitalizations within 30 days at the five targeted hospitals declined and patient/clinician contact was increased despite a decrease in home visits. The heart failure re-hospitalization rate was reduced from 7.4% to 4.5%.
- Researchers from the Army Medical Department demonstrated that home telemonitoring of children aged 6-17 afflicted with asthma can significantly improve outcomes over traditional office-based care. A group of "virtual patients" recorded and submitted their vital sign data online to their case managers weekly. These were compared to a control group receiving traditional care. The one-year trial showed that children who accessed care through the web based case management system had better MDI/S scores, more adherence to keeping a journal of daily asthma symptoms, and a greater increase in asthma knowledge. In sum, the "virtual patients" achieved excellent asthma care, revealing that store-and-forward technology combined with case management can provide an important tool to assist in disease management.

- Using remote consultations, monitoring of vital signs and online discussions, new reports on two demonstrations show how telemedicine can effectively help people lose weight and keep the pounds off. The demonstrations were based at the University of California - Davis and the University of Colorado. The California demonstration focused on children and adolescent patients and concluded that children struggling with weight problems embraced the telemedicine weight management services and that telemedicine could help facilitate care to individuals in rural areas lacking access to health care. The Colorado demonstration provides a remote option to the university's traditional weight loss program that provides individuals with access to self-monitoring software programs, web-based reporting, and health professionals from their home.

*Objective(s):*

Use the benefits we'd obtain from new infrastructure to reduce overall health care costs to providers, payers, and citizens

Improvement in the monitoring of patients with the increased broadband

Reduces repeated visits to a hospital emergency department, and decreases recurring hospitalizations for conditions such conditions as Chronic Obstructive Pulmonary Disease (COPD), CHF

*Action(s):*

Make health care local as opposed to long distance traveling for care

Reduce patient care cost by providing quicker, safer, higher quality of care

Use of video technology to interact with patient closer to home

Reduce redundant and unnecessary health care treatments and diagnostic tests

Through the use of telehealth and broadband gather information and monitor patients while they remain in their home.

*Measurable Outcome(s):*

Track improvements of health care cost metrics

Track improvements in patient compliance in new onset diabetes patients

Monitor the decrease in patient days for key admissions such as diabetes, COPD, and CHF

Develop innovative programs based on successes from other states that limit or reduce health care costs.

**Goal #14 – Ensure long-term sustainability of the network**

This need is universal among all providers and wherever they practice. The Michigan FCC Pilot Program Collaborative will leverage the experiences and the lessons learned in the Upper Peninsula as a model, and make the appropriate modifications for the remaining MTAs.

In the time that the Upper Peninsula has been in operation, two business models have emerged: one being a pay for what you use, and using the buying power of the whole with a small membership fee for the overhead activities. The other being an all inclusive membership fee to cover the all costs of the network.

When the business and clinical needs of providers, health care facilities, and patients are the foundation of the decision making process, true value is created. If there is to be business value created by the network, and sustainability is to be achieved, we must attract and incorporate all private and public providers to participate. Fair and equitable sustainable funding models are readily available for use within Michigan, and will be incorporated in our business model going forward.

In addition any opportunity for the centralization of service and technology should be explored to prevent duplication of investment in infrastructure.

*Objective(s):*

Expand the scope of the program to include all providers

Establish a sustainable business model

*Action(s):*

Highlight the increased capabilities and capacities to meet the needs of health care professionals and the benefits to consumers

Work in collaboration with the MTAs through the Advisory Committee and the HIE Resource Center to review and plan to incorporate best practices and successful business models throughout the state

Monitor for increases in membership of commercial or for profit providers



*Measurable Outcome(s):*

Realization of the value of the network by the medical community, which results in investment

Audit and monitor the financial transactions, and include appropriate fraud and abuse detection tests

**Goal #15 – Improve Michigan's Economy**

Michigan has a diversified economy, based in tourism, agriculture, and industry and is a leader in R&D with more than 360 world-class labs and institutes in the state – public and private - are devoted to industrial and manufacturing technologies. The production of autos, trucks and parts is a \$106.2 billion industry in Michigan. Michigan is the home to GM, Ford and Daimler-Chrysler, as well as auto suppliers such as Lear Corporation, a leader in interior design systems, and Delphi Corporation, manufacturer of a wide variety of systems for today's vehicles.

Michigan's economy is highly dependent on tourism. Its geography supports winter sports, (skiing, snowboarding, and snowmobiling), and summer sports, (water sports, fishing, hunting and golf). There are 40 ski and snowboarding areas in Michigan, mostly located in the Western, Northern Lower Peninsula, and Upper Peninsula of Michigan. Also, there are major golf developments at these same locations which provide a year-round draw to tourists. There are 1033 golf courses in Michigan – more per capita than any other state. Michigan has the largest number of recreational boaters then any other state. The United States Coast Guard maintains a significant force to support the myriad of boaters and shipping in Michigan's waters. With the exception of the Detroit Air and rescue station, all are located in the heavily rural northwestern and northern areas of the state. No matter where you stand in Michigan you are never further than six miles from open water and never further than eighty five miles from the Great Lakes. Providing quality health care support to a tourist population in a rural setting is a challenge. Recreational activities all have some component of physical risk and potential injury with the need for access to care.

Having connectivity to telemedicine and health information exchange (HIE) in these areas will have a profound affect on the quality of care received by the patient. In addition, providing first rate recreational facilities with the security of knowing that should anything happen while you are there, your records are readily available, and world class specialist are on-hand for consult within minutes will generate a positive draw for vacationers in Michigan and will create positive economic impact to the area.

*Objective(s):*

Create collaborations and alliances for the mutual benefit of patient health care providers and health care organizations that create a value proposition for investment in the network

*Action(s):*

Highlight the increased capabilities and capacities to meet the needs of health care professionals and the benefits to consumers

*Measurable Outcome(s):*

Realization of the value of the network by the medical community, which results in investment

Monitor the expansion of networks and the addition of for profit membership

**B.  
Approach**

## B. Approach

*The Michigan strategy for aggregating the specific needs of health care providers, leveraging existing technology to adopt the most efficient and cost effective means of connecting providers*

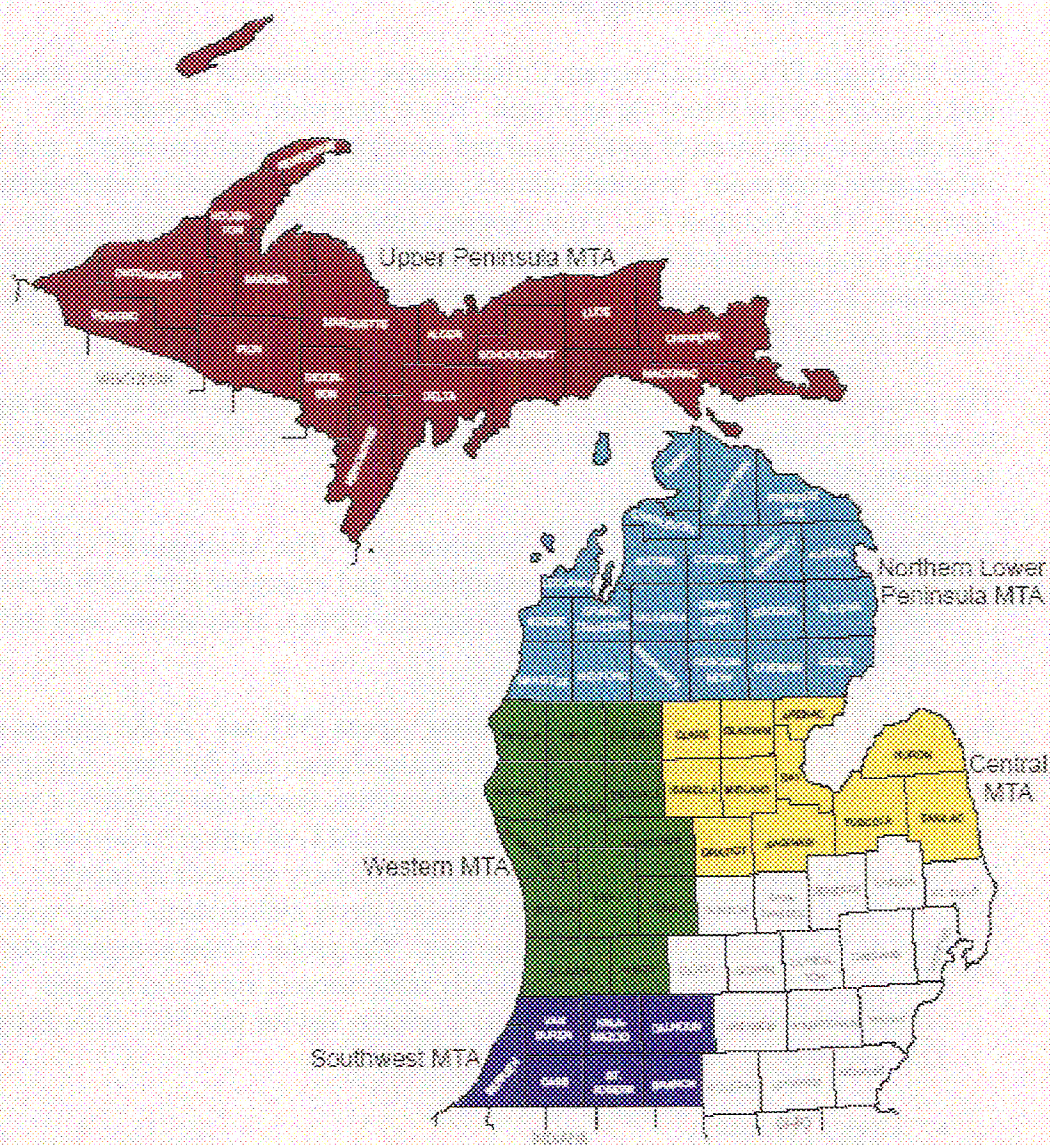
The Michigan FCC Pilot Program Collaborative was created to provide structure and direction to the statewide approach. It is a statewide collaborative of stakeholders comprised of established and emerging telehealth networks and health information exchanges, hospitals, clinics, associations, and state governmental agencies. The Michigan FCC Pilot Program Collaborative is working to set priorities and coordinate a phased expansion of broadband across the state of Michigan, focusing on underserved and rural areas from both a broadband and medical perspective.

The process The Michigan FCC Pilot Program Collaborative used to create a plan to expand broadband access to hospitals and clinics in Michigan includes the following steps:

- **Created an inclusive statewide collaborative** –The Michigan FCC Pilot Program Collaborative includes established and emerging telehealth networks and health information exchanges, hospitals, clinics, associations, and state governmental agencies.
- **Analyzed Michigan's Medical Trading Areas (MTAs)** - In the process of planning for electronic health information exchange and delivery, during the development of the Michigan Health Information Exchange (MIHIN) *Conduit to Care Report*, the state identified nine separate MTAs within its borders. The MTAs are clusters of counties in which the delivery of medical care is concentrated, based on an analysis of major payer claims data. They will be used as the planning units for this project. The project team compared the boundaries of the MTAs with medically underserved, rural and limited broadband penetration areas to create a priority list for this FCC Pilot Program. The five priority MTAs are:
  - Upper Peninsula
  - Northern Lower Peninsula
  - Western Michigan
  - Southwest Michigan
  - Central Michigan

The plan for implementation will vary based on each individual MTA. Initially each was analyzed for the existence of provider networks, patterns of care, quantity of medically underserved residents, and rural character. Some of the

MTAs contain active telemedicine and telehealth networks, while others have programs in the planning stages. Some require new installations for broadband access, while others require upgrades in order to support new applications.





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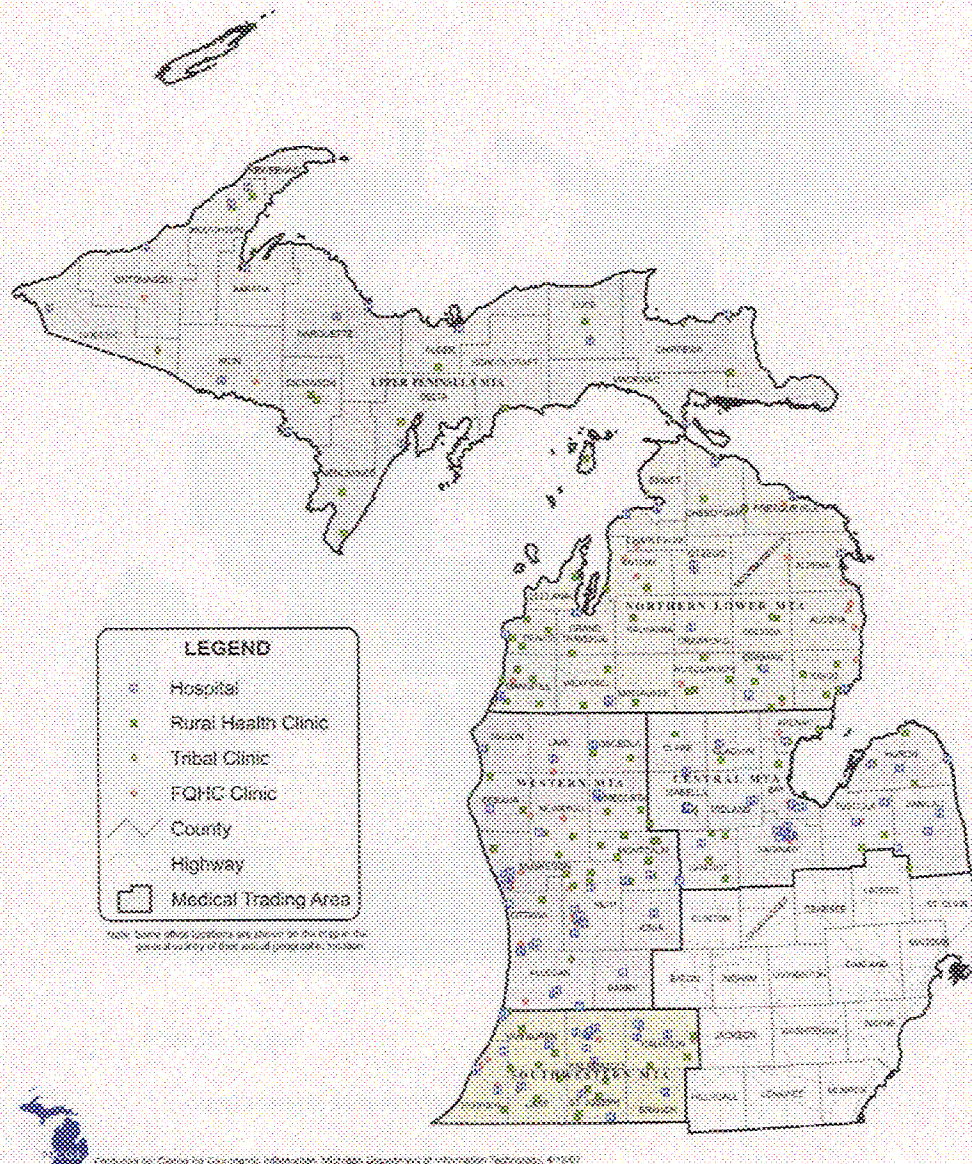
August 19, 2004

- **Analyzed the existing networks** - In order to understand what areas had the most need, a review of existing infrastructure in the five MTAs was undertaken.



In addition, the various networking technologies (fiber-optic cable, wireless, cable, etc) were analyzed to determine which one(s) will provide the best service at the lowest cost and can be scaled to meet future demand.

- **Determined location and mapped all publicly funded clinics for inclusion --**  
Another major challenge of the project is to ensure that all publicly funded rural clinics in Michigan have broadband access for telemedicine and telehealth.



- **Determined a minimum level of connectivity** - Unless facilities are sufficiently advanced in their efforts to warrant a higher level of connectivity,

all facilities in the plan will receive an established minimum level of broadband access. Federally Qualified Health Clinics, Rural Health Clinics and Tribal Health Clinics that have basic or no connectivity could expect sustained bandwidths of 1.5 Mb under the program. For the hospitals, a range of speeds will be needed based on size and the role it plays within the MTA. This will range from 10Mb to 100Mb. Where possible redundant connectivity will be included to insure continuous operations.

### ***Michigan's viable strategic plan for aggregating usage among health care providers***

By focusing on the hospitals and the federally designated medical clinics in the Medical Trading Areas with the highest Rural-Urban Commuting Area (RUCA) numbers, we are concentrating our connections while still providing coverage into the areas in most need by building a backbone infrastructure and core network that can be leveraged for future needs as they are identified and resources become available to fund them. See Appendix 1 for a complete listing of sites with addresses, phone numbers and RUCA codes.

Within the MTAs the smaller hospitals and clinics would be linked to the regional referral hospitals and research institutions. Building this hierarchy allows the resources of the area aggregated and shared while providing the broadest care options to patients.

### ***Network Overview –***

Our goal in this program is to establish telehealth and telemedicine infrastructure and services in the areas of Michigan where the need is the most acute. Success of this initiative requires connectivity that is adaptive, affordable, reliable and secure. The pilot program will establish an infrastructure that will encourage innovative use of telehealth applications, while creating a sustainable system that will not become overly expensive once the pilot program is completed.

### **Targeted Connection Sites:**

We are proposing a three part improvement to the telehealth infrastructure in Michigan. The first part is combining and expanding the existing Regional Telehealth Networks into a state-wide telehealth network, again, initially focusing on the 5 rural MTAs, and attach its backbone to the national backbone. The second part is adding broadband speed connections to all 152 Federal Designated Rural Health Clinics and 15 Tribal Medical Centers in the state, as well as, the 72 Federally Qualified Health Clinics (FQHC) in the five rural MTAs so they can attach and utilize the state-wide telehealth network. The third part is improving the connections to the hospitals and major clinics that are in rural MTAs onto the newly expanded state-wide telehealth network.



## **Network Priorities**

The first priority is to increase broadband availability and affordability to rural clinics and small hospitals. Due to the extreme rural areas that these facilities serve, reliable and affordable broadband is not always available. Providing this link to the outside world, will enable these rural sites to connect to and utilize telehealth applications. Due to the limited staffing at these sites, these connections would need to be easy to use and maintain as well as managed remotely.

The second priority is to increase the amount of bandwidth to the regional and referral hospitals so they can handle the increase of telehealth traffic. By enabling the outlining clinics with broadband, the larger hospitals will need additional bandwidth to accommodate the increase in the bandwidth intensive telehealth applications. In almost all cases, these hospitals already have some level of connection; the upgrades would supplement the current connections to handle the additional traffic. These "hub" sites will also need additional VPN capacity to ensure secure communication with the clinics.

## **Network Design Philosophies**

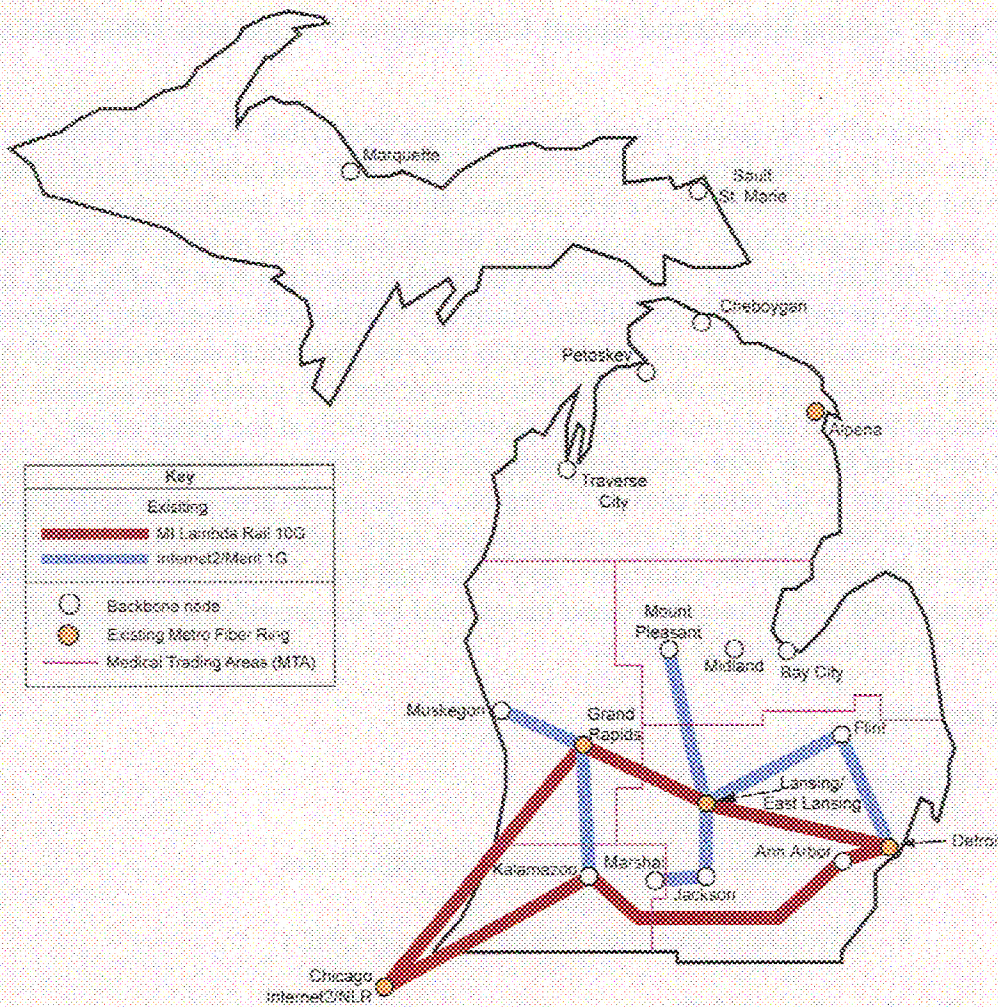
There are two options in design philosophies for connecting the larger hospitals. The first maximizes the use of Internet2's backbone and the second maximizes the use of private/commercial national backbones. Both have their benefits and issues. The Internet2 approach has a higher initial cost but a much lower ongoing cost. While the private/commercial approach has lower initial cost and offers slightly faster deployment, the ongoing costs are drastically higher. There is also the obvious third option, an Internet2 and private/commercial hybrid, where as many sites as economically feasible are directly attached to Internet2 and the rest of the site are attached via a private/commercial link.

We have evaluated all three options and the network is designed to be flexible to maximize connecting as many sites as funding allows.

## **Part 1: Improving and Expanding the Existing State Telehealth Network Backbone**

Michigan already has several points of presence (PoP) on both Internet2 and National LambdaRail networks, as well as several other national commercial backbones. These networks link Michigan with several national backbones but are limited to the southern urban part of the state. Some of the existing Regional Telehealth Networks in these areas already connect to this infrastructure. In these cases, we are proposing improving connection speed and reliability. We are also proposing to expand the network backbone to complete the coverage in the rural areas of the state and increase bandwidth of the existing coverage. The proposed

upgrades would expand this broadband network access to cover all of the Lower and Upper Peninsulas.



*Current Internet2/NLR Map*

This expansion would extend the national backbone to Traverse City, Petoskey, Cheboygan, Alpena, and Midland in the Lower Peninsula and Sault St. Marie and Marquette in the Upper Peninsula. This would link all of the existing Regional Telehealth Networks into the national backbone and allow them to utilize telehealth applications within the region and throughout the state or nation.

The connection in Alpena will connect to the Alpena Area Fiber Consortium which consists of local government, health care providers and educational institutions. Connecting to the Consortium would allow all its members to benefit from the

improved broadband. This benefit would also extend to the communities around the new expanded network.

## **Part 2: Adding Broadband Speed Connections to Rural and Tribal Medical Providers**

The Federally Designated Rural Health Clinics and Tribal Medical Centers in the state and Federally Qualified Health Clinics (FQHC) and additional clinics in the rural MTAs will each receive a broadband connection to attach to and utilize telehealth applications. This connection will be capable of at least 1.5Mb (with at least 768 Kb upstream). The most economical connection type (Cable, DSL or T1) available in the area will be utilized. Each site will need the necessary network routing/switching hardware to connect to their existing local area network (LAN) and a network security device(s). The network security needs to be capable of stateful firewall and intrusion prevention system (IPS) at the speed of the connection (a.k.a. wire speed) and support virtual private network (VPN) connections to the other sites in the region. All sites will also utilize network-based quality of service (QoS) to ensure telehealth traffic receives priority on the network. Due to the fact that the clinics are very small and have limited resources, these connections will be monitored and maintained by the provider so as to not place an additional burden on the clinics.

### **Tier 4 Sites**

#### **Upper Peninsula MTA**

- 6 Medical Clinics
- 18 Federally Designated Rural Health Clinics
- 7 Tribal Medical Centers
- 2 Federally Qualified Health Clinics (FQHC)

#### **Northern Lower MTA**

- 9 Medical Clinics
- 43 Federally Designated Rural Health Clinics
- 3 Tribal Medical Centers
- 16 Federally Qualified Health Clinics (FQHC)

#### **Central MTA**

- 16 Medical Clinics
- 21 Federally Designated Rural Health Clinics
- 1 Tribal Medical Centers
- 11 Federally Qualified Health Clinics (FQHC)

#### **West MTA**

- 21 Medical Clinics
- 41 Federally Designated Rural Health Clinics

- 2 Tribal Medical Centers
- 31 Federally Qualified Health Clinics (FQHC)

#### **Southwestern MTA**

- 13 Medical Clinics
- 26 Federally Designated Rural Health Clinics
- 1 Tribal Medical Centers
- 11 Federally Qualified Health Clinics (FQHC)

#### **Other Sites**

- 3 Federally Designated Rural Health Clinics
- 1 Tribal Medical Centers

### **Part 3: Improving the Connections to the Hospitals and Major Clinics in the Regional Telehealth Networks in Rural Areas**

Using the already established MTA, this part of the expansion would focus on the five MTAs that cover the rural areas of the state. Based on the size of the medical care facility and its role in the network, three levels of bandwidth are needed. The referral hospitals would get a 100Mb connection, regional hospitals would get 45Mb and small hospitals and mid to large medical clinics would get 10Mb connections. Each site will need the necessary network routing/switching hardware to connect to their existing local area network (LAN) and a network security device(s). The network security needs to be capable of stateful firewall and intrusion prevention system (IPS) at the speed of the connection (a.k.a. wire speed) and support virtual private network (VPN) connections to the other sites in the region. All sites will also utilize network-based quality of service (QoS) to ensure telehealth traffic receives priority on the network. Some sites already have some existing equipment and connectivity. In those cases, the site would be upgraded to the appropriate network tier. (Note: complete information on included sites is located in the Appendix 1)

- **Tier 1 Sites** - 100 Mb capable connection into the national backbone  
In each of the rural MTAs there are one or two primary hospitals that serve as the referral hub for the region.

#### **Upper Peninsula MTA**

- Marquette General Hospital

#### **Northern Lower MTA**

- Munson Medical Center
- Alpena Regional Medical Center
- Northern Michigan Hospital

### **Central MTA**

- Midmichigan Medical Center - Midland
- Central Michigan University\*

### **West MTA**

- Spectrum Health-Downtown Campus

### **Southwestern MTA**

- Borgess Health
- Bronson Methodist Hospital
- Western Michigan University\*

\*Currently on Internet2

- **Tier 2 Sites - Regional Hospitals:** 45 Mb capable connection

### **Upper Peninsula MTA**

- Mackinac Straits Hospital
- Schoolcraft Memorial Hospital
- Keweenaw Memorial Health Center
- Keweenaw Memorial Medical Center
- Doctors Park
- Chippewa County War Memorial Hospital
- Helen Newberry Joy Hospital
- Munising Memorial Hospital
- Upper Peninsula Health Plan
- Pathways
- Chippewa Medical Associates
- Portage Health System Inc
- Baraga County. Memorial Hospital
- Dickinson County Memorial Hospital
- Ontonagon Memorial Hospital
- Grand View Hospital
- Peninsula Medical Center

### **Northern Lower MTA**

- Paul Oliver Memorial Hospital
- Kalkaska Memorial Health Center
- Charlevoix Area Hospital

### **Central MTA**

- Bay Regional Medical Center - Main Campus
- Bay Regional Medical Center - West Campus
- Covenant Medical Center – Harrison
- Covenant Medical Center – Cooper

- MidMichigan Medical Center -- Gladwin
- MidMichigan Medical Center - Clare
- Gratiot Community Hospital
- Central Michigan Community Hospital
- St Mary's Medical Center

#### **West MTA**

- St Mary's Health Care
- Metropolitan Hospital - Grand Rapids
- Spectrum Health - Kent Community Campus
- Spectrum Health-Reed City Campus
- Pennock Hospital
- Mecosta County General Hospital
- Allegan General Hospital
- Borgess-Pipp Health Center
- Hackley Hospital
- Holland Community Hospital
- United Memorial - Kelsey Campus
- United Memorial Hospital - Greenville

#### **Southwestern MTA**

- Bronson Vicksburg Hospital
- Three Rivers Area Hospital
- Lakeland Hospital - St Joseph
- Community Health Center-Branch Co

- **Tier 3 Sites - Small Hospitals:** 10 Mb capable connection  
Due to the fact that these facilities are small and have limited resources, these connections will be monitored and maintained by the provider so as to not place an additional burden on the clinics.

#### **Upper Peninsula MTA**

- St Francis Hospital
- Iron County General Hospital

#### **Northern Lower MTA**

- Cheboygan Memorial Hospital
- Mercy Hospital - Cadillac
- Mercy Hospital - Grayling
- Otsego Memorial Hospital
- St. Joseph Health System
- Tendercare Health Center - Rogers City
- West Branch Regional Medical Center
- West Shore Medical Center

### **Central MTA**

- Healthsource Saginaw
- Huron Memorial Hospital
- Hills & Dales General Hospital
- Scheurer Hospital
- McKenzie Memorial Hospital
- Standish Community Hospital
- MidMichigan Health Park – Mt. Pleasant

### **West MTA**

- North Ottawa Community Hospital
- Lakeshore Community Hospital
- Ionia County Memorial Hospital
- Memorial Med Center-W Michigan
- Metropolitan Hospital - Cedar Springs
- Mercy General Health Partners
- Mary Free Bed Hospital & Rehab Center
- Mecosta County Medical Center
- Zeeland Community Hospital
- Sheridan Community Hospital
- Carson City Hospital
- Gerber Memorial Hospital

### **Southwestern MTA**

- Battle Creek Health System
- Lakeland Specialty Hosp/Berrien Center
- Lee Memorial Hospital
- Oaklawn Hospital
- Lakeview Comm Hospital
- Sturgis Hospital
- Watervliet Community Hospital
- Lakeview Medical Center
- South Haven Community Hospital

C.

Organization

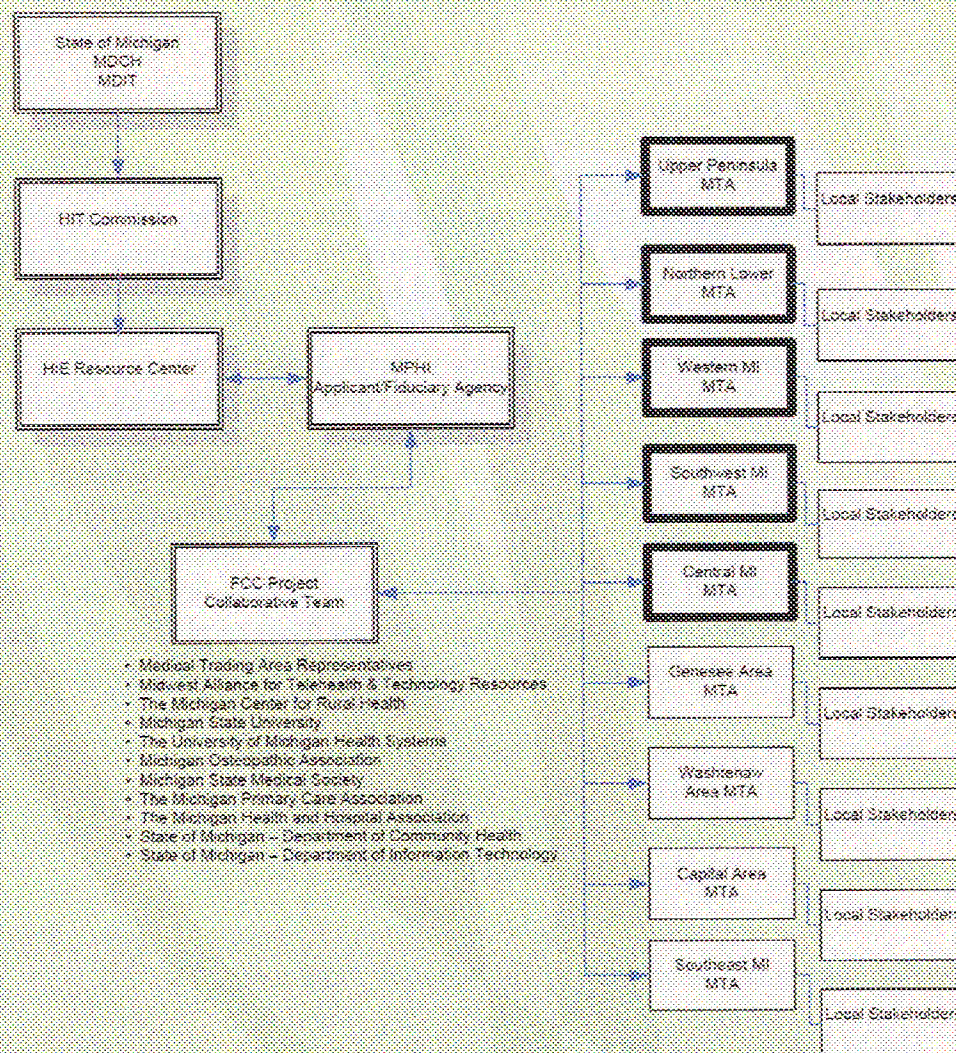
Description/Key Personnel



## C. Organization Description/Key Personnel

### Michigan FCC Pilot Program Collaborative

Organization Chart  
Tuesday, May 01, 2007



## ***The Michigan FCC Pilot Program Collaborative***

The Michigan FCC Pilot Program Collaborative was assembled from the key players with a vested interest in telehealth and telemedicine in Michigan, the core of which was the State of Michigan Departments of Community Health and Information Technology, partners in taking the lead in the state on HIE and HIT. The group then contacted Michigan State University and the University of Michigan both of whom are nationally known for their roles in telemedicine and telehealth from policy, research, and provider perspectives. From there we reached out to established networks and the federally funded telemedicine resource for their expertise. To broaden our scope, we then reached out to associations that represent the rural, primary care, tribal health, hospitals and providers. Finally, we included the efforts of our Medical Trading Areas who are organizing efforts to exchange HIE, and who encourage the adoption of ERM on a regional basis.

## ***The Michigan Department of Community Health (MDCH)***

The state is providing a strong vision, leadership and direction on health IT. Complementing this is the exceptional program and policy alignment at the state level, between Governor Jennifer M. Granholm and legislature, and at the Departmental level, not only MDIT and MDCH but also among the associated programs and support services. In addition to MDCH and MDIT, these include the Departments of Labor and Economic Growth, Human Services, Civil Service, Corrections, Military and Veterans Affairs and Management and Budget.

Further, information technology and Health Information Technology (HIT) are fully integrated within Governor Jennifer M. Granholm's Cabinet Action Plan (CAP), the State of Michigan IT Strategic Plan and MDCH's Strategic Technology Plan. Michigan is one of the few states with a state enterprise-level policy and program plan, and has received national recognition for its integrated CAP, State IT and MDCH planning process from the Government Performance Program.

Recognizing the importance of technology and health care, MDCH provided oversight of the MiHIN *Conduit to Care* report, a public/private collaboration to develop the initial roadmap for the State of Michigan's implementation of health information technology and health information exchange.

## ***The Michigan Department of Information Technology (MDIT)***

The Michigan Department of Information Technology (MDIT) was created to achieve a unified, cost-effective approach for managing information technology among all Executive Branch agencies. This single department uses a strategic, statewide service approach to address the challenges of declining resources,